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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/30/2005

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EXAMINER

SASAKI, SHOGO

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/524,382	Applicant(s) SHAW ET AL.	
	Examiner Shogo Sasaki	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-19, 26-32 and 54-59 is/are pending in the application.
- 4a) Of the above claim(s) 11-19, 26-32, 55, 56 and 58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 10, 54, 57 and 59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/14/2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Amendments to the claims are acknowledged. Cancellations of claims 8, 20-25 and 33-53 were previously acknowledged.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the single pump configuration with valves disposed in conduits claimed in claims 1-7, 9, 10, 54, 57 and 59 (e.g., [0048]) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Interpretations

3. It is noted that claim 1 does not positively claim an analyzer. Therefore, it is not considered to be structurally limiting. Any further references (such as controlling by analyzed data portion of claim 1; claim 9; and calculation/dilution factor in claims 3-5, 54

Art Unit: 1797

and 59) to said elements were not given patentable weight even if those references further limit said unclaimed element.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-7, 9, 10, 54, 57 and 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation "pump means for..." in claim 1 appears to invoke 112(6) interpretation. A means-plus-function limitation recites a function to be performed rather than definite structure or materials for performing that function. The phrase "means for" must not be modified by sufficient structure, material, or acts for achieving the specified function. MPEP 2181 (I) Appropriate clarification is required.

As to claim 1, it is unclear if applicant intends to positively set forth an analyzer as part of the claimed subject matter.

Regarding claim 1, the recitation "a pump controller arranged to receive analyzer data indicative of ... dependence upon the received data" merely recites the purpose of a process, i.e., an intended effect of a process of controlling the pump means to control the dilution process based on the analyzed data from the analyzer, which is not claimed in said claims.

"It is noted that the mixer of claims 1 and 57 in view of the specification is merely an intersection of three conduits (e.g., [0033]). Does it take a specific design ([0051]) to achieve for instance a third flow rate being substantially equal to the sum of a first and second flow rates? Also, the pump means in view of the specification is a pump disposed between the analyzer and the mixer ([0048]). It is unclear how the pump being provided between the mixer and the third conduit/analyzer further comprises valves supposedly provided on the first or second conduit."

Firstly, how does the controller receive data critical to the adjustment of flow rate to achieve desired dilution without claiming the analyzer? What is responsible for actually controlling/performing, i.e. the specific functional recitations such as “said mixer being coupled to the first conduit with a valve and the second conduit with a valve such that the sample enters the mixer through the first conduit at a first flow rate and the diluent enters the mixer through the second conduit at a second flow rate, the mixer being coupled to the third conduit and arranged so that said diluted sample exits the mixer into the third conduit at a third flow rate, *said third flow rate being substantially equal to the sum of the first and second flow rates.*” How is an intersection of said conduits capable of achieving such specific functions? How are the dilution factors (e.g., claims 4, 5, 54 and 59) calculated?

It is noted that the specification does not appear to explain how the functional limitation may be achieved in the embodiment ([0048]-[0052]) claimed. It is requested that applicant provide in the argument section of the reply how this configuration (claims 1 and 57) having a pump on one of three conduits and a flow regulator on one of three conduits regulates flow rates in each of three conduits.

The control means per se does not change the flow rates. Claims as drafted, it is the valves and the pump that change the flow rates under the instruction from the controller receiving the data from the unclaimed analyzer. Furthermore, what is the analyzer analyzing to provide data to the controller?

Note: Proper and conventional phrases to incorporate an active process limitation with patentable weight into an apparatus claim are for e.g., “a controller configured to/for...” and “a controller programmed to/for...” for performing an active process step(s)/scheme(s) (e.g., [0041]-[0046]). Lastly, it is unclear what is meant by the recitation “arranged to...” It is unclear if the recitation specifies: (a) a specific special/positional arrangement of the controller with respect to the other components of the device; or (b) a specific computer program/software within the controller controlling the pump, valve and etc to control the flow to achieve a specific dilution of a fluid.

Regarding claim 57, it is unclear how the recitations “for mixing a sample with a diluent;” “for supplying a sample to the mixer at a first flow rate;” “for supplying a diluent

Art Unit: 1797

to the mixer at a second flow rate;" for receiving a diluted sample from the mixer;" and "for pumping the diluted sample from the mixer through the third conduit at a third flow rate substantially equal to the sum of the first and second flow rates" are achieved. The claim appears to be incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections and the functional recitations recited for each element.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 57 are rejected under 35 U.S.C. 102(b) as being unpatentable over by the Applicant's Admission of Prior Art (Fig. 2; and [0010]-[0019]).

Regarding claims 1 and 57, the Applicant's Admission of Prior Art (AAPA) discloses a pumping device comprising a mixer (34); a first conduit (33 or 33'); a second conduit (35); and a third conduit (30) comprising a pump (31) disposed thereon wherein one of the first conduit comprises a valve (32) disposed therein.

8. Claims 1-7, 9, 10, 54 and 59 is rejected under 35 U.S.C. 102(b) as being unpatentable over the Applicant's Admission of Prior Art (Fig. 1; and [0010]-[0019]).

Regarding claims 1-7, 9, 10, 54 and 59, the Applicant's Admission of Prior Art (AAPA) discloses a pumping device for the mass spectrometer comprising a mixer (the intersection); a first conduit connected to 18 with a variable flow regulator 20; a second conduit connected 12 with a variable flow regulator 14; and a third conduit with a controlled pump 22 (The controller will have to be provided for controlling the controllable pump 22. See [0009] and [0012]).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 2-7, 9, 10, 54, 57 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admission of Prior Art (Fig. 2; and [0010]-[0019]).

Regarding claims 2-7, 9, 10, 54, 57 and 59, AAPA discloses all of the limitations as set forth above.

AAPA does not specifically disclose the second valve disposed on the second conduit. However it is well known in the art to provide a flow regulator in a conduit that deliver or remove fluids.

It would have been obvious to one having ordinary skill in the art at the time of the invention to add a valve to the second conduit, for the purpose of providing higher degree of flow regulations in the entire system.

Response to Arguments

13. Applicant's arguments filed 10/21/09 have been fully considered.

14. In response to page 10, third paragraph to page 11 first paragraph and page 11, last paragraph to page 13, second paragraph, the examiner asserts that that his previous position was indeed proper. Applicant has amended the claims accordingly. The applicant's argument appears moot in view of the amendments. The functional language should describe the functional (structural cooperative) relationship(s) between positively claimed elements. For instance, the previous claim 1 was drafted in a way that the first through third conduits were not required to be elements of the instant invention. While applicant might have intended for said elements to lead to the mixer and/or pump, there was no requirement that said conduits to be elements of the instant invention. The conduits could be elements of a separate system to which the claimed system is connected to/arranged with. The previous claims as drafted only required that the mixer and/or pump to be structurally capable of being connected to conduits, if one so chooses. Applicant has clarified the issue by amending the previous claims to positively list the conduits. The examiner fails to see how applicant agrees with the examiner with regard to other unclaimed elements, such as an analyzer, but not the conduits. Therefore the argument is not found persuasive. It is noted that the previous rejection did consider and address the conduits.

For means plus function language, see the 112 rejection section above.

15. The objection to claim 10 is withdrawn.

16. The 112 rejections of claims 1-7, 9, 10, 54, 57 and 59 from the previous action are withdrawn.

Art Unit: 1797

17. Applicant's arguments with respect to claims 1-7, 9, 10, 54, 57 and 59 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shogo Sasaki whose telephone number is (571)270-7071. The examiner can normally be reached on Mon-Thur, 10:00am-6:30pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797

2/26/10